



Guidelines For Estimating Cereal (Barley) Silage Costs

Information Update

www.gov.mb.ca/agriculture/

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This guide is designed to provide you with planning information and a format for calculating the cost of producing cereal silage.

The major advantage of silage is that the crop can be harvested when it is ready in almost all weather conditions. Since there are fewer harvesting losses, more nutrients are harvested per acre compared with most other systems. Ensiling permits the use of a wider range of crops including grasses, legumes, grains, corn and miscellaneous salvage crops that have suffered weather damage or weed infestation.

The major disadvantages of silage compared with hay is that it requires more capital investment and labour. Also silage has limited market potential, because trucking costs limit distance to market, it must be produced near the location where it will be fed.

This budget is based on ensiling 1500 acres. Machinery and labour requirements for silage can be met by sharing with neighbours to reduce unit costs. This budget can also be used to compare your costs with custom rate charges.

Producers are encouraged to calculate their own costs of production. Each farm has a different set of costs and yields due to varying soil types, climatic conditions and agronomic practices.

Cereal (Barley) Silage Cost Summary - March, 2002

	<u>Cost/ Acre</u>	<u>Cost/ Ton Wet</u>	<u>Cost/ Ton DM</u>	<u>Your Cost</u>
A. Operating Costs				
1.01 Seed	\$8.75	\$1.59	\$4.55	_____
1.02 Fertilizer	\$24.19	\$4.40	\$12.56	_____
1.03 Chemicals	\$12.00	\$2.18	\$6.23	_____
1.04 Field Fuel Costs	\$8.75	\$1.59	\$4.55	_____
1.05 Moving Fuel Costs	\$0.86	\$0.16	\$0.45	_____
1.06 Packing Fuel Costs	\$0.84	\$0.15	\$0.44	_____
1.07 Repair & Maintenance	\$5.00	\$0.91	\$2.60	_____
1.08 Insurance	\$4.00	\$0.73	\$2.08	_____
1.09 Miscellaneous	\$8.00	\$1.45	\$4.16	_____
1.10 Land Taxes	\$6.50	\$1.18	\$3.38	_____
Subtotal Operating	\$78.89	\$14.34	\$40.98	_____
1.11 Interest on Operating	\$2.56	\$0.47	\$1.33	_____
Total Operating Costs	\$81.45	\$14.81	\$42.31	_____
B. Fixed Costs				
2. Depreciation				
2.01 Cropping Equipment	\$11.25	\$2.05	\$5.84	_____
2.02 Silage Equipment	\$10.50	\$1.91	\$5.45	_____
2.03 Bunker Storage	\$1.00	\$0.18	\$0.52	_____
3. Investment				
3.01 Land	\$17.50	\$3.18	\$9.09	_____
3.02 Cropping Equipment	\$4.81	\$0.88	\$2.50	_____
3.03 Silage Equipment	\$2.25	\$0.41	\$1.17	_____
3.04 Bunker Storage	\$0.18	\$0.03	\$0.09	_____
Total Fixed Costs	\$47.48	\$8.63	\$24.67	_____
C. Labour				
4.01 Cropping	\$8.75	\$1.59	\$4.55	_____
4.02 Swathing	\$1.25	\$0.23	\$0.65	_____
4.03 Harvesting	\$1.33	\$0.24	\$0.69	_____
4.04 Bunker	\$1.33	\$0.24	\$0.69	_____
Total Labour Costs	\$12.66	\$2.30	\$6.58	_____
Total Cost of Production	\$141.60	\$25.75	\$73.56	_____
Estimated yield per acre				
Wet ton		5.5		
Dry ton			1.9	

Silage (Barley) Cost of Production Worksheet Assumptions

1. This budget provides a guideline to determine the cost of production for a silage enterprise.
2. Investment in machinery, equipment and storage is \$251.67 /acre. It was assumed that the machinery complement was similar to a grain enterprise, except for the combine and the addition of a forage harvester, a windrower and a packer.
3. A yield of 5.5 tons (wet) per acre was assumed.
4. A land value of \$500 per acre was assumed.

A. Operating Costs

Your Farm

1.01 Seed

	1.75	bushels/acre	
x	<u>\$5.00</u>	<u>seed cost (\$/bu)</u>	
=	<u>\$8.75</u>	<u>\$ /acre</u>	

1.02 Fertilizer

Nitrogen	70	lbs/acre	
x	<u>\$0.23</u>	<u>cost/lb</u>	
=	<u>\$16.10</u>	<u>\$ /acre</u>	

P ₂ O ₅	33	lbs/acre	
x	<u>\$0.25</u>	<u>cost/lb</u>	
=	<u>\$8.09</u>	<u>\$ /acre</u>	

K ₂ O		0	lbs/acre	
	x	\$0.135	cost/lb	
	=	\$0.00	\$ /acre	

Sulfur		0	lbs/acre	
	x	\$0.24	cost/lb	
	=	\$0.00	\$ /acre	

Zinc		0	lbs/acre	
	x	\$1.50	cost/lb	
	=	\$0.00	\$ /acre	

Total	=	\$24.19	\$ /acre	
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1.03 Chemicals

	\$12.00	weed control	
+	\$0.00	disease control	
+	\$0.00	<u>insect control</u>	
=	\$12.00	\$ /acre	

1.04 Field Fuel Costs

<u>Operation</u>	<u>Times Over</u>	<u>Width feet</u>	<u>Speed mph</u>	<u>Fuel \$/ac.</u>
Cultivate	1	48	5	1.13
Spray	1	90	10	0.18
Cultivate	1	48	6	0.94
Plant	1	40	5	1.36
Windrow	1	24	5	1.36
Forage Harvester	1	24	3	3.77
Total				\$8.75

1.05 Moving Fuel Costs

	5.50	gross yield tons/acre	_____
÷	20.0	truck capacity (tons)	_____
=	0.275	trips/acre	_____
x	3	miles/trip	_____
=	0.825	total miles/acre	_____
÷	2.0	fuel consumption (miles/gal)	_____
=	1.875	litres/acre (4.546 litres/gal)	_____
x	<u>\$0.46</u>	<u>fuel cost (\$/litre)</u>	_____
Total =	\$0.86	\$ /acre	_____

1.06 Packing Fuel Costs

	1,500	acres	_____
x	<u>5.50</u>	tons average yield	_____
=	8250	tons total yield	_____
÷	<u>45</u>	tons/hour	_____
=	183.33	hours	_____
x	<u>15</u>	litres/hour	_____
=	2750	litres	_____
x	<u>\$0.46</u>	<u>\$/litre</u>	_____
=	\$1,265	total cost	_____
÷	<u>1,500</u>	acres	_____
=	\$0.84	\$ /acre	_____

1.07 Repair & Maintenance

	0.04	% repair rate	_____
x	<u>\$125</u>	<u>investment/acre</u>	_____
=	\$5.00	\$ /acre	_____

1.08 Insurance

	\$1.30	crop insurance	_____
+	<u>\$2.70</u>	<u>hail insurance</u>	_____
=	\$4.00	\$ /acre	_____

1.09 Miscellaneous

=	\$8.00	\$ /acre	_____
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1.10 Land Taxes

= **\$6.50 \$ /acre**

1.11 Interest on Operating

 \$78.89 subtotal operating
+ 2 average
x 0.065 % interest rate
= **\$2.56 \$ /acre**

Capital Costs

	<u>Total</u>	<u>Per Acre</u>	
Land Market Value	\$750,000	\$500.00	_____
Cropping Equipment (does not include combine)	\$187,500	\$125.00	_____
Silage Equipment (includes forage harvester, windrower, trucks and packer)	\$175,000	\$116.67	_____
Bunker Storage	\$15,000	\$10.00	_____
Total Investment	\$1,127,500		_____
Total Machinery & Bunker Investment/acre		\$251.67	_____

B. Fixed Costs**2. Depreciation**

Original Value - Salvage Value
Useful Life

2.01 Cropping Equipment

	\$125.00	cost/acre	_____
-	\$12.50	salvage value	_____
+	<u>10</u>	<u>useful life</u>	_____
=	\$11.25	\$ /acre	_____

2.02 Silage Equipment

	\$116.67	cost/acre	_____
-	\$11.67	salvage value	_____
+	<u>10</u>	<u>useful life</u>	_____
=	\$10.50	\$ /acre	_____

2.03 Bunker Storage

	\$10.00	cost/acre	_____
-	\$0.00	salvage value	_____
+	<u>10</u>	<u>useful life</u>	_____
=	\$1.00	\$ /acre	_____

3. Investment

$$\frac{\text{Original Value} + \text{Salvage Value}}{2} \times \text{Investment Rate}$$

3.01 Land

	\$500.00	cost/acre	_____
x	<u>0.035</u>	<u>% investment rate</u>	_____
=	\$17.50	\$ /acre	_____

3.02 Cropping Equipment

	\$125.00	cost/acre	_____
+	\$12.50	salvage value	_____
x	<u>0.035</u>	<u>% investment rate</u>	_____
=	\$4.81	\$ /acre	_____

3.03 Silage Equipment

	\$116.67	cost/acre	_____
+	\$11.67	salvage value	_____
+	2	average	_____
x	<u>0.035</u>	<u>% investment rate</u>	_____
=	\$2.25	\$ /acre	_____

3.04 Bunker Storage

	\$10.00	cost/acre	_____
+	\$0	salvage value	_____
+	2	average	_____
x	<u>0.035</u>	<u>% investment rate</u>	_____
=	\$0.18	\$ /acre	_____

C. Labour

Cropping		1	cropping hours/acre	
	x	<u>\$10.00</u>	<u>\$/hour</u>	
	=	\$8.75	\$/acre	
Swathing		0.125	swathing hours/acre	
	x	<u>\$10.00</u>	<u>\$/hour</u>	
	=	\$1.25	\$/acre	
Harvesting		0.13	harvesting hours/acre	
	x	<u>\$10.00</u>	<u>\$/hour</u>	
	=	\$1.33	\$/acre	
Packing		0.13	bunker hours/acre	
	x	<u>\$10.00</u>	<u>\$/hour</u>	
	=	\$1.33	\$/acre	
Total	=	\$12.66	\$/acre	

For further information contact your local Manitoba Agriculture office.

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